DOCUMENT RESUME

ED 238 174 EA 016 272

AUTHOR Whorton, David M.
TITLE Organizational Environment, Structure, Leadership, and Effectiveness: An Exploratory Model.
SPONS AGENCY Northern Arizona Univ., Flagstaff.
PUB DATE Apr 83
NOTE 16p.; Paper presented at the Annual Meeting of the American Educational Research Association (Montreal, Quebec, Canada, April 11-15, 1983).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Administrators; *Educational Environment; Elementary Secondary Education; Foreign Countries; *Leadership Styles; *Models; Organizational Objectives; Predictor Variables; Principals; Questionnaires; *School Effectiveness; Teachers
IDENTIFIERS Arizona; England

ABSTRACT

Purporting to test a contingency model for schools, data from 45 Arizona schools and 4 British schools were analyzed and compared to examine relationships between organizational environment, structure, leadership style, and perceived effectiveness. Environmental factors were measured by teacher and administrator responses to four Likert-type scales. Leadership style was determined by administrator responses to Fiedler's Least Preferred Coworker Questionnaire and Group Atmosphere Scale. Organizational structure was determined by responses of teachers and administrators to two specially developed but different instruments, one used in England and the other in Arizona. Perceived effectiveness was measured through the use of Mott's Organizational Effectiveness Questionnaire. While the findings lack compelling validity due to the differences in the sample size, the author does draw some conclusions. Schools were perceived as more effective when the leaders' style was humanistic and the principals' perception of the teachers was positive. The model used in support of the hypotheses proved to be a significant predictor of perceived effectiveness for both sets of schools. While it shows further study is needed, the model does have utility for organizational theorists. (MD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED238174

Organizational Environment, Structure, Leadership, and Effectiveness: An Exploratory Model

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

David M. Whorton

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

by:

David M. Whorton
Professor of Educational Administration
Northern Arizona University[1]

Presented at the
American Educational Research Association
Annual Meeting
April 11-15, 1983
Montreal, Quebec, Canada

Data from forty-five Arizona schools and four British schools were analyzed and compared to examine relationships between organizational environment, structure, leadership style, and perceived effectiveness.

EA 016 272

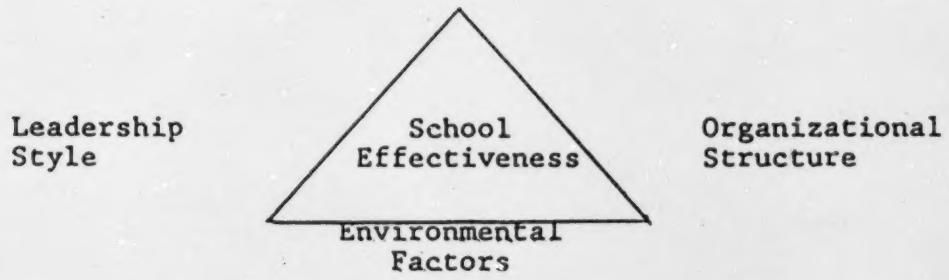
Organizational Environment, Structure, Leadership, and Environment: An Exploratory Model

Contingency theory in organizational studies is based on the concept that the effectiveness of the organization is contingent upon the way the organization adapts to uncertainty in its' environment. The way the organization responds to these uncertainties is reflected in the leadership style and organizational structure. Kast and Rosenzweig describe contingency theory saying: "The contingency view seeks to understand the interrelationships within and among subsystems as well as between the organization and its environment and to define patterns of relationships or configurations of variables."[2]

Studies by Woodward,[3] Lawrence and Lorsch,[4] Pugh,[5] and others explored the relationships between organizational technology, structure, and environment in business and industrial enterprises. Derr and Gabarro,[6] Hanson,[7] Miskel, Fevurly, and Stewart,[8] and a few others have examined these relationships and others which relate to contingency theory in school settings. While these studies have clarified some relationships they have not yet developed a theoretical model that is useful for predictive and explanatory purposes.

It was the purpose of the studies reported here to test a contingency model for schools by exploring relationships between school environment, structure, leadership style,

and perceived effectiveness. The model may then have some utility for organization theorists in explaining and predicting relationships. The model itself can be depicted as follows:



Two studies have been conducted examining relationships defined by the model. Both will be briefly described here and then comparisons will be made.

The first study dealt with forty-five Arizona schools while the second involved four British schools. In both studies the independent variables were organizational structure, leadership style, and environmental characteristics. The dependent variable was perceived effectiveness.

In these studies environmental factors were measured by teacher and headmaster/principal responses to four Likert type scales derived from Mintzberg.[9] This generated four variables, environmental dynamism, complexity, diversity, and hostility, each rated on an eight point scale. The dynamism scale ranged from stable, little change occuring, to dynamic, a turbulent environment with considerable change. Complexity ranged from simple to complex. A simple

environment is one in which knowledge to meet demands can be broken into easily comprehended components while complex environments require sophisticated knowledge of clients, placement opportunities, etc. The diversity scale ranged from integrated environments with limited opportunities for service to diversified environments offering opportunities for a wide range of school service. The hostility characteristic ranged from munificent, a friendly supportive climate, to hostile in which relationships of the school to the environment could be characterized as stressful.

Leadership style was determined by headmaster/principal responses to Fiedler's Least Preferred Co-Worker Questionnaire (LPC) and Group Atmosphere Scale (GAS).[10] Both are sematic differential scales. Low scores on the LPC are interpreted as task orientated while high scores are humanistic orientated leadership styles. Low scores on the GAS indicated poor leader-member relations while high schools indicated good leader-member relations. Also, teachers were asked to rate their headmasters/principals on a scale from task to humanistic orientation.

Organizational structure was determined by gathering responses of teachers and headmasters/principals to an instrument developed by Hage,[11] in the case of the Arizona schools, and an instrument created by Murphy and Lyons,[12] based on Hage's work, for use in British schools. The

Murphy and Lyon'sStructural Properties Questionnaires (SPQ) is an improved Anglicized version of Murphy and others American SPQ and offers more detailed analysis of structural factors than Hage's earlier work. Both instruments provided measures of organizational centralization, complexity, and formalization. Centralization is the degree to which decision-making and power are distributed within the organization. Complexity has to do with the degree of specialization and level of professionalism. Formalization is the extent to which there are rules governing procedure and pressure for compliance with the rules.

For both sets of schools perceived effectiveness was measured by Mott's Organizational Effectiveness Questionnaire.[13] Mott defined effectiveness as "the ability of an organization to mobilize its centers of power for action production and adaptation."[14]

Hypotheses

For this report of the two studies the following hypotheses were examined.

1. Taken together, organizational structure, leadership style, and environmental characteristics are significantly related to perceived organizational effectiveness.

2. Taken separately, organizational structure, leadership style and environmental characteristics are

significantly related to perceived effectiveness.

The hypotheses were tested by creating full regression models (models containing all of the variable sets) and then restricting the models by removing one variable set at a time. Comparisons between the two sets of schools were then made.

Methodology

For the Arizona study fifty-four schools were randomly selected from the state's directory of schools. Of these, forty-five agreed to participate. This set of schools included 14 high schools, 5 junior high or intermediate schools, 25 elementary schools, and one school with all grades combined. The schools ranged in size from 200 to more than 2000 students.

Four British schools were selected to participate in the study. School A was a secondary school of 1650 students located in a rapidly growing new town with a socially mixed population. The school is widely known for its' innovative style. School B was a secondary school of 600 students located on the same campus as School A. Both schools share physical education facilities, central administrative offices, recreational areas and other facilities. While a campus director heads the whole operation each school is separately administered by deputy heads. School C is a combination infant and primary school of 380 children

located in a fairly new low income housing area near a large midlands industrial city. The school's catchment area has an adult unemployment rate of 15% or more. Sixty-two percent of the children qualify for free lunch. School D is a primary school of 200 students located in a middle to upper class area a few miles from School C. The area is expanding with newly built expensive housing. Older homes nearby are large and well maintained.

In both sets of schools the questionnaires were administered to headmasters or deputy heads and principals and to a twenty percent random sample of the teaching staff. Means, standard deviations, and correlations coefficients were computed as well as the multiple linear regression models used in hypothesis testing.

Findings

Table I displays the results of the full model regression analysis for the forty-five Arizona schools. In support of the first hypotheses the model proved to be significant in its' relationship to the criterion perceived organization effectiveness ($F=2.68$, p .05, $df=9/35$). In Table I Beta weights were included to show the direction of the relationship between the predictor and the criterion variables while "expected direction" was included to display predicted relationships. R^2 change

TABLE I

Statistical Relations of Predictors to the Criterion Organizational Effectiveness: Forty-five Arizona Schools

RSQ: Full Model .40			Multiple R: Full Model .63		
	R^2 Change	Expected Direction	Beta	F	Probability
Environmental:					
Dynamism	.002	–	-.02	.30	NS
Complexity	.000	–	-.10	.39	NS
Diversity	.079	–	.14	.80	NS
Hostility	.023	–	-.01	.00	NS
Leadership Style:					
Group Atmosphere	.209	+	.43	6.69	$<.01$
Least Preferred Co-Worker	.004	+	-.09	.42	NS
Organizational Structure:					
Complexity	.000	–	.03	.07	NS
Centralization	.005	+	.09	.41	NS
Formalization	.075	+	.29	4.55	$<.01$

df = 9/36

F = 2.68 ($p < .05$)

indicates the contribution of each variable to the model's R square (RSQ). Subsequent restrictions of the model by removing variable sets one at a time generated models in which organizational structure, particularly formalization, and leadership style, particularly Group Atmosphere, were separately significant predictors of perceived effectiveness. However, environmental characteristics using the scales derived from Mintzberg were not separately significant predictors.

For the four British schools Table II displays results of the regression analysis. Not only was the full model significant but so were all the restricted models including the environmental characteristics. In terms of structure centralization was the significant variable. For leadership style both the LPC and GAS were significant positive predictors of perceived effectiveness. The environmental characteristics diversity and hostility were significantly related to perceived effectiveness.

In terms of reported leadership style there was little difference between the mean values for the two sets of schools. In addition to the LPC and GAS completed by the headmasters and principals, teachers were asked to simply rate the principal on a five point scale from task to humanistic orientation. While there was little difference between sets of schools on these measures there was a tendency for headmasters and principals to rate themselves

TABLE II

Statistical Relations of the Predictors to the Criterion Organizational Effectiveness: Four British Schools

RSQ: Full Model .88 Multiple R: Full Model .94

Predictors	R^2 Change	Expected Direction	Beta	F	Probability
Environmental:					
Dynamism	.005	–	.27	.39	NS
Complexity	.005	–	-.77	1.81	NS
Diversity	.332	–	.85	4.63	$<.01$
Hostility	.317	–	-.77	4.35	$<.01$
Leadership Style:					
Group Atmosphere	.064	+	.91	9.84	$<.001$
Least Preferred Co-Worker	.124	+	.48	5.23	$<.01$
Organizational Structure:					
Centralization	.015	–	-.19	4.44	$<.01$
Formalization	.011	–	.11	2.35	NS
Complexity	.008	+	-.18	1.25	NS

df = 9/19

F = 15.32 ($p < .001$)

more humanistically than did the teachers in their school.

The structural variables are not directly comparable since the Hage instrument was used for the Arizona set and the Murphy/Lyons instrument for the British set. However, it is apparent that formalization was the most significant variable in the set for Arizona schools and centralization for the British schools.

The results for environmental variables shows that they are significantly related to effectiveness in the case of British schools, but not for Arizona schools. For comparison mean values for the four environmental characteristics are given below:

Environment	Arizona	British
Dynamism	4.36	5.57
Complexity	4.69	5.78
Diversity	5.19	5.75
Hostility	3.10	3.35

The results would seem to indicate that British school heads and teachers perceive a more volital environment which is significantly related to perceived effectiveness in contrast to Arizona schools.

Conclusion

While the findings reported here are interesting they lack compelling validity due to the large difference in sample size. With only four British schools it is difficult

to make any significant conclusions. The model, in support of the hypotheses, proved to be a significant predictor of perceived effectiveness for both sets of schools. For Arizona schools the environmental characteristics were, separately, not significant predictors while they were for the British schools.

Schools were perceived as being more effective when the leader's style was humanistic and the leader's perception of the teachers was positive. In terms of organizational structure for Arizona Schools studied the greater the formalization the greater the effectiveness as perceived by staff members. For British schools studied the greater the centralization the less the perceived effectiveness.

With the mixed result from use of the environmental characteristics scale derived from Mintzberg it is evident that other methods for measuring environmental uncertainty need to be developed. The Murphy/Lyons Structural Properties Questionnaire along with it's American counterpart provide a solid base for comparative analysis fo school organizational structure.

While much more study is needed the model used in these studies does have utility for organizational theorist and, with refinements in instrumentation and method, may eventually be useful for the practitioner in formulating

organizational structures and leadership styles based on evironmental characteristics that will cause the school to be more effective in meeting environmental demands.

FOOTNOTES

1. The data on British schools in this report was gathered while the author was Visiting Research Fellow at Open University, England, and was supported by a grant from Northern Arizona University.

2. F.E. Katz and J.E. Rosenzweig, Contingency Views of Organization and Management, (Chicago: Science Research Associates, 1973) p.ix.

3. Joan Woodard, Industrial Organizational: Theory and Practice, (Oxford: Oxford University Press, 1965).

4. Paul R. Lawrence and Jay W. Lorsch, Organization and Environment, (Homewood Ill.: Richard D. Irwin, Inc., 1969).

5. D.S. Pugh, D.J. Hickson, C.R. Hinnings, and C. Turner, "The Context of Organizational Structure," Administrative Science Quarterly, 14 (1969), 91-114 and other articles by Pugh and associates.

6. C. Brooklyn Derr and John J. Gabarro, "An Organizational Contingency Theory for Education," Educational Administration Quarterly, 8:2 (1972), 26-43.

7. E. Mark Hanson, "School Management and Contingency Theory: An Emerging perspective," Educational Administration Quarterly, 15:2, (1979), 98-116.

8. Cecil G. Miskel, Robert Fervurly, and John Stewart, "Organizational Structures and Processes, Perceived School Effectiveness, Loyalty, and Job Satisfaction," Educational Administration Quarterly, 15:3, (1979) 79-118.

9. H. Mintzberg, The Structuring of Organization, (Englewood Cliffs, New Jersey: Prentice Hall, 1972) 267-269.

10. F.F. Fiedler, A Theory of Leader Effectiveness, (New York: McGraw-Hill, 1967).

11. H. Hage, "An Axiomatic Theory of Organization," Administrative Science Quarterly 10 (1965) 289-320 and J. Hage and R. Dewar, "Elite Values Versus Organizational Structure in Predicting Innovation," Administrative Science Quarterly 18 (1973) 279-290.

12. Michael J. Murphy and Geoffrey Lyons, Development of an Instrument to Measure Organizational Characteristics of Schools in the United Kingdom, unpublished paper, July, 1982. The author acknowledges with thanks the permission to use this paper and the SPQ granted by Murphy, University of Utah and Lyons, Anglian Regional Management Centre, Danbury, Essex, England.

13. P.E. Mott, The Characteristics of Effective Organization, (Englewood Cliffs, New Jersey: Prentice Hall, 1979).

14. Ibid, p.17.